

UNITED STATES OF AMERICA



FOUNDED 1836

WASHINGTON, D.C.

THE
C A S E
OF THE
MANUFACTURERS
OF
Soap & Candles,
IN THE
CITY OF NEW-YORK,
STATED AND EXAMINED,
TO WHICH ARE PREFIXED,
THE
LAWS OF THE STATE OF NEW-YORK,
CONCERNING
INFECTIOUS DISEASES,
WITH AN ADDITION, IN FORM OF AN
APPENDIX;
CONTAINING,
SEVERAL Documents AND Papers, RELATIVE
TO THESE
SUBJECTS.

PUBLISHED BY THE ASSOCIATION OF TALLOW CHANDLERS
AND SOAP MAKERS.

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NEW-YORK:

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P R E F A C E.

AN Act passed by the Legislature during the sitting at Albany last Winter, concerning the removal of Unhealthy Trades from the City of New-York, gave rise to the present PUBLICATION. After the frequent visitations of this place within a few years, by Pestilential Distempers, it certainly became an interesting object to detect the cause of the evil, and whence it originated. Although sick persons and unhealthy air, are frequently brought from sea into the harbour of this seat of Commerce by ships, yet an opinion is gaining an establishment among the citizens, that more dangerous sources of infected air exist among themselves on shore. The detection of this fact is important, and the acknowledgment of it by the people of America is very honorable to them. It being thus admitted that the American Epidemic Fevers were caused by exhalations from substances on shore, and in large Towns, chiefly from those, which the industry of man had collected for the purposes of Trade and Manufacture, it necessarily became an object of enquiry, which of the substances, so accumulated, emitted pestilential vapours. It will appear to the reader, that in one of the Laws, printed in this collection, the Tallow-Chandlers and Soap-makers, are considered as carrying on a business too noxious to be endured, and extremely detrimental to the public health. Provision was accordingly made for prohibiting their manufactures within certain limits. They remonstrated against this regulation, as likely to be ruinous to some of their number, oppressive to all, and at the same time, not calculated to do the good expected from it.

The desire to have the matter investigated upon its merits, without favor or partiality, gave rise to the following argument; in which both the principles of Science, and the practice

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of the Arts, are brought forward to shew their business has been unreasonably complained of. They believe the discussion to be fair and conclusive; and as it involves an investigation, what the peculiar nature of pestilential air is, as well as its application to the Publishers' particular occupations, they have undertaken to get it printed and distributed about. They feel anxious for the propagation of the truth. They feel a concern for the persons of their trade in the other cities of the United States, who they fear may be crushed by a policy as cruel as that which lately threatened themselves with destruction. They flatter themselves this Pamphlet will do good; and, that this might be more certainly the case, they have caused the Laws of New-York, preventive of the Introduction and Spreading of Infeclious Diseases, to be exhibited in one view, and have added a few other matters, connected with the subject.

It is useful now and then to revise the Laws; and they, at this time, have thought it proper to lay before the public, on the subject of Infection, the statutes at large. Like other citizens, they feel a great desire to bring all matters connected with the healthiness of the Cities of America, and conducive to their better police, to a just understanding; and if the public can derive any substantial information or leading hint, from the contents of this Pamphlet, the compilers will have the satisfaction of believing their labour is not lost. The great principle they wish to establish, is, that the matter of Infection is the septic acid vapour, or volatile acid of putrefaction; that thereupon, and thereafter, regulations about Nuisances, Lazarettos, and Quarantines, may be made in an exact manner, and not by guesses, as they heretofore have been; for they have no hesitation to believe, and the United States afford facts enough on the subject, that much of the present system of preventing and stopping infection, is equally disgraceful to Police, Physic, and Commerce; and though their late persecution roused their indignation against a few individuals, they have never ceased to respect decency, and to labour for the public good.

NEW-YORK, March 28th, 1797.

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T H E
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C H A P T E R I.

EXTRACTS FROM LAWS OF THE STATE OF NEW-YORK.

SECTION I.

An ACT to prevent the bringing in and spreading of infectious distempers in this State.

PASSED 4th MAY, 1784.

W HEREAS the Ports of this State are now open to Vessels coming from any foreign Parts, by means whereof many infectious distempers may be brought into this State ; in order as much as possible to prevent the same,

I. *Be it enacted by the People of the State of New-York, represented in Senate and Assembly, and it is hereby enacted by the authority of the same, That all vessels, of whatever kind they may be, having on board any person or persons infected with the yellow fever or any other contagious distemper, or coming from any place infected with such contagious distemper, shall not come into any of the ports or harbors of this State, or nearer to the City of New-York, than the island commonly called Bedlow's Island, and shall be obliged to perform quarantine there, or in such other place, and for such time, and in such manner as the Governor, or person administering the government for the time being, or in his absence from the said City, as the Mayor thereof shall think proper to direct and appoint ; and that during the time of such quarantine, no person or persons whomsoever, nor any goods or merchandize whatsoever, coming or imported in such vessels, shall come or be brought*

on shore, unloaded or be put on board of any other vessel within this State, or the neighboring States of New-Jersey, or Connecticut, until such vessel, persons, goods and merchandize shall respectively be discharged from such quarantine, by an order from the Governor, or person administering the government for the time being, or in his absence from the said City, from the Mayor thereof; and all masters or commanders of such vessels, and all others who should presume to put on shore, unload or put on board any other vessel as aforesaid, any person or persons, goods or merchandize, contrary to the true intent and meaning of this act, having first had notice thereof, shall forfeit the sum of two hundred Pounds, current money of this State.

II. *And be it further enacted by the authority aforesaid,* That the several branch Pilots and their respective deputies belonging to this State, shall use their utmost endeavors to hail every vessel coming into this State from sea, and shall ask and demand of the master or commander of every such vessel, whether he has on board any person or persons, sick or infected with the Yellow Fever, or any contagious distemper, or whether such vessel comes from any place where infectious distempers prevail; and being answered in the affirmative, shall immediately give notice to the commander of such vessel of the penalty aforesaid, and forbid his going any further with his vessel than Bedlow's Island, and that he is to anchor his vessel there, until he shall have further directions from the Governor, or person administering the government for the time being, or in his absence from the said City, from the Mayor thereof; and shall also forbid such commander from putting on shore any person who belonged to, or performed the voyage in such vessel, and from unloading or putting on board any other vessel, any person or persons, or goods and merchandize out of his said vessel, under the penalty aforesaid; and any branch pilot or such deputy, neglecting his duty therein, shall respectively forfeit the sum of fifty pounds for every offence; and if any person or persons shall come on shore from such vessel (unless first permitted and licenced by the governor, or person

administering the government for the time being, or in his absence from the said city, by the Mayor aforesaid) it shall and may be lawful to use all necessary force and constraint to compel such person or persons to return on board the said vessel, or to dispose of him or them in some suitable place, in order to prevent the infection from spreading.

III. *And be it further enacted by the authority aforesaid,* That if the commander of any vessel, having any person or persons on board, sick or languishing under any of the aforesaid distempers, or coming from any place infected therewith, shall not make a true discovery thereof, when thereunto required as aforesaid, such commander shall forfeit the sum of two hundred pounds for every such offence ; and the Governor, or person administering the government for the time being, is hereby authorised and empowered, by and with the advice and consent of the council of appointment, to appoint a Physician to inspect all vessels which may have on board, or which may be suspected of having on board, any person or persons infected with a contagious distemper ; and it shall and may be lawful to and for such Physician, and he is hereby authorised and required, to enter on board all and every vessel and vessels coming into this State, under the circumstances aforesaid, and there to make strict search, examination and inquiry into the health, state and condition of the master, passengers and mariners of such vessels respectively, and to report his discovery and opinion thereupon without delay, to the governor, or person administering the government for the time being, or in his absence from the City of New-York, to the Mayor of the said City ; and if any person or persons whomsoever, shall presume to hinder or obstruct the said Physician in performing the duties required of him by this act, such offender shall forfeit for every such offence, the like penalty of two hundred pounds lawful money aforesaid ; and the said Physician shall be entitled to, and shall receive from the commander of every vessel to be visited by him in pursuance of this act, the sum of twenty-eight shillings for his services in making such examination, and reporting thereupon.

IV. *And be it further enacted by the authority aforesaid,* That it shall be and is hereby made the duty of the master and wardens of the port of New-York, to give their utmost aid and assistance in carrying this law into effect, and in their own names to sue and prosecute for all the penalties which shall arise, accrue or become forfeited, by virtue of this act; and to apply the same for the use and support of the Light-house established at Sandy-Hook, for the security of commerce.

SECTION II.

An ACT to amend the Act, entitled, "An Act to prevent the bringing in and spreading of infectious distempers in this State."

PASSED 27th MARCH, 1794.

I. *BE it enacted by the People of the State of New-York represented in Senate and Assembly,* That the act entitled "An act to prevent the bringing in and spreading of infectious distempers in this State," shall extend to all vessels coming from any port or place whatsoever. And that in the absence of the person administering the government of this State for the time being, from the cities of Albany and Hudson, the Mayor of the said cities respectively, or in their absence, the Records of the said cities respectively, shall execute the act aforesaid in the said respective cities, and upon Hudson's river opposite to the said cities respectively, and within one mile above and below the same, and two or more justices of the peace residing in any town in this State, bordering or lying upon any port or harbor of this State, shall also execute the said act, in such towns respectively, and upon the waters opposite to the same towns.

II. *And be it further enacted,* That it shall be lawful for the said persons hereby authorized to execute the said act, so far as respects vessels coming into the ports and harbors of this State, and also for any two or more justices of any of the inland towns of the State, to take effectual measures to pre-

vent the introduction and spreading of any infectious distemper into any part of the State by land, and for that purpose to stop, detain, and examine any person coming from any place infected with any such distemper ; and if there be good cause to suspect any person to be infected as aforesaid, it shall be lawful for the person and persons herein before authorised to execute this act, and the act aforesaid, to cause every such person to be sent out of the State, not being an inhabitant of this State, or kept in such place as will not expose the inhabitants of the same to receive and take such infectious distemper ; and further to authorise and appoint any such person or persons under him or them, to and in the execution of this and the act aforesaid, as he or they may deem proper, and also to do every other act and thing which may be thought necessary to carry into effect the object of this and the act aforesaid, as fully as if the same was herein particularly expressed and provided for.

III. *And be it further enacted*, That it shall be lawful for the treasurer of this State, for the time being, and he is hereby required, out of any monies not otherwise appropriated, from time to time to pay such sum and sums of money as the person administering the government of this State, for the time being, shall by warrant under his hand and seal, direct to be applied in and about the execution of this act, and the act aforesaid, not exceeding the sum of one thousand pounds in any one year.

IV. *And be it further enacted*, That it shall and may be lawful for the person administering the government of this State for the time being, by and with the advice and consent of the council of appointment, to appoint such Physician in the cities of Albany and Hudson, for the purposes aforesaid, as they may think necessary and proper ; and the Physician who shall in pursuance of the said act, examine any vessel coming from a foreign port, shall be entitled to, and receive from the commander thereof, the sum of three pounds, instead of the sum mentioned in the said act.

V. *And be it further enacted*, That it shall and may be lawful for the person administering the government for the time being, from time to time to appropriate the island commonly called and known by the name of Governor's Island, for the purpose of erecting buildings, or setting up tents thereon, for the reception or accommodation of any person or persons infected, or supposed to be infected with any such distemper as aforesaid, or any other sick or disordered person or persons, and their necessary attendants; any lease, grant or demise made, or to be made, by the regents of the university notwithstanding.

SECTION III.

An ACT to prevent the bringing in, and spreading of infectious diseases in this State.

PASSED 1st APRIL, 1796.

BE it enacted by the People of the State of New-York, represented in Senate and Assembly, That a person practising physic shall be appointed Health Officer for the city of New-York, and that seven persons shall be appointed commissioners of the Health Office for the said city, and by which several names of office the said persons shall be respectively known in the law.

And be it further enacted, That all vessels arriving in the port of New-York, from parts beyond the sea, having on board forty passengers, all vessels arriving in the said port, having on board a person sick with a fever, all vessels arriving in the said port on board of which a person may during the time such vessels were at the foreign port from which they last sailed, or during their passage from thence to the port of New-York, have died of a fever, and all vessels arriving in the said port from places, where at the time of their departure, an infectious disease prevailed, shall be subject to quarantine of course. That it shall be lawful for the person administering the government of this State, from time to time,

whenever, and as he shall judge advisable, to issue his proclamation, declaring what other vessels to be described as coming from the countries, islands, or ports, therein to be mentioned, shall also be subject to quarantine. That it shall in like manner be lawful for him to issue his proclamation, assigning and limiting the places or spaces where all vessels subject to quarantine, shall, on their arrival within the said port, be brought to anchor, and remain until they shall have been visited and examined by the said Health Officer, and by him reported to some one of the said Commissioners to be free from infection. That it shall in like manner be lawful for him to issue his proclamation, prohibiting or regulating the intercourse by land or ferries between this State and such places within any other of the United States where he shall be informed an infectious disease doth prevail. That all persons offending in the premises shall be liable to be punished as for a misdemeanor, by fine and imprisonment, in the discretion of the Court having thereof cognizance; and moreover it shall be lawful for the said commissioners to cause any vessel subject to quarantine, which before she shall have been so visited, examined and reported as aforesaid, shall be brought to anchor elsewhere within the said port of New-York; and all vessels, although not described in this act, or in such proclamation as above mentioned, as vessels subject to quarantine, having on board a person sick with a disease which in the judgment of the Health officer there shall be reason to apprehend is infectious, or having on board articles which may be apprehended to contain infection, to be removed to and brought to anchor within the said places or spaces so to be assigned and limited, and to cause all persons and articles which may have been landed, to be arrested and seized, and to be returned on board such vessel, or removed to the Lazaretto herein after mentioned; and it shall also be lawful for them to cause all persons who shall come into this State, contrary to the prohibition or regulations in such proclamation as last mentioned to be arrested, and if well, to be conveyed to the place out of this State from whence they last came, or if sick, to be removed to the said Lazaretto.

And be it further enacted, That the said Health Officer shall without delay, visit and examine all vessels subject to quarantine, and whenever he shall judge any such vessel to be free from infection, he shall so report her to some one of the said commissioners, and he shall be entitled to receive from the master of every vessel so to be visited by him, if coming from a foreign port, the sum of three pounds, and if coming from a port within the United States the sum of thirty two shillings for his services therein ; and the commissioners shall cause him at all times when he shall require it, to be furnished with a convenient boat, and with men sufficient to row the same; and to that end if they shall deem it most convenient, it shall be lawful for them to contract with any person for that purpose. And in order that the said Health Officer may be enabled the better to perform the examination of vessels subject to quarantine, it shall be lawful for him to put all such questions to the persons on board any such vessel as shall be needful and proper to that end, and the persons to whom such questions shall be put, shall respectively, truly administer the same on oath, and which oath he is hereby authorized to administer accordingly ; and every person swearing falsely in the premises shall be considered as liable to the pains and penalties for wilful and corrupt perjury.

And be it further enacted, That it shall be lawful for the person administering the government of this State to cause a building suitable to serve for a Lazaretto, the expence whereof, exclusive of the monies to be expended for the purchase of lands, if any shall be purchased, not to exceed the sum of two thousand pounds, to be erected on Nutten Island, or on other lands which may be deemed more eligible, and which other lands he is hereby authorized to purchase for the people of this State, for the reception of persons and articles arriving in a vessel subject to quarantine, and by the Health Officer, or the said commissioners, ordered or permitted to be removed from on board such vessel, and for the reception of all persons within the said city sick with an infectious disease, and who it may be necessary to have removed to such Lazaretto.

And be it further enacted, That the said Health Officer shall be physician to the said Lazaretto, and the commissioners of the Health Office shall in other respects have the superintendance thereof, and employ mates, nurses and attendants, and provide bedding, cloathing, fuel, provisions, medicines, and such other matters as shall be requisite therein; and it shall be lawful for them to make reasonable and prudential needful rules and orders for the government and management thereof.

And be it further enacted, That all persons removed to the said Lazaretto, shall be liable to pay a reasonable sum for their board, medicine and attendance therein, and if any of them deemed to have sufficient means shall refuse to pay such sum, the same shall be recovered from them by the said commissioners by suit in their own name.

And be it further enacted, That it shall be lawful for the said Health Officer whenever he shall judge it necessary to prevent infection to cause any bedding and cloathing arriving in a vessel subject to quarantine to be destroyed.

And be it further enacted, That the said Health Officer shall for his services as Physician to the said Lazaretto, and the said commissioners shall for their services be entitled from time to time to such annual sum as the Legislature shall judge reasonable.

And be it further enacted, That it shall be lawful for the person administering the government to grant warrants on the treasury in favor of the following persons, that is to say— In favor of the person or persons whom he shall employ as superintendant or superintendants to erect the said Lazaretto, the requisite sums for that purpose not to exceed in the whole the said sum of two thousand pounds above mentioned. In favor of the commissioners of the Health Office to be expended by them in the execution of their trust by virtue of this act, such sums as the said person administering the government shall from time to time judge necessary, not to exceed in the whole, the sum of one thousand pounds in any

one year, and in favor of the vendor of any lands which may be purchased whereon to erect the said Lazaretto, the amount of the consideration money for such lands.

And be it further enacted, That every person practising phylic in the said city, who shall attend a patient sick with a fever, deemed by him to be infectious, shall forthwith make report in writing of the case of such patient, to some one of the commissioners of the health office, upon pain of forfeiting fifty dollars for every neglect; to be recovered with costs of suit, by action of debt in any court of record, in the name of the Commissioners of the Health Office, and be applied when recovered, to the relief of the poor in the said Lazaretto.

And be it further enacted, That it shall be lawful for the Mayor, Aldermen and Commonalty of the City of New-York in Common Council convened, from time to time as they shall judge adviseable, to make bye-laws, ordinances, rules and orders for filling up or raising, or for reducing or levelling any lot or lots within the said city, and for cleansing and scouring the streets, allies, passages, curtilages, yards, cellars, vaults, sinks and other places within the said city, and for regulating all manufactories of soap, candles, vellum, glue, leather, or starch, and all other manufactories, and all works, trades or businesses, causing noxious effluvia or vapor, in respect to the manner in which, and the places or spaces within, the limits of the said city, where such manufactories, works, trades, or businesses shall be carried on or used, and whereby to preserve general health in the said City, and for removing or destroying all offensive or putrid articles of substances, which may be stored or otherwise collected, and generally for preventing all other nuisances within the said city, under such penalties of fines and forfeitures as shall be reasonable, and in the cases wherein no fine or forfeiture shall be expressed, the persons offending in such cases shall be punishable as for a misdemeanor, by fine and imprisonment in the discretion of the court, and also to enjoin on and commit to the com-

missioners of the health office and every of them such duties and authorities for the more effectual execution of every bye-law, ordinance, rule and order, to be made in this behalf as shall be necessary. *Provided, nevertheless,* That no such bye-law, ordinance, rule or order shall remain in force longer than for twelve months from the day of the making thereof, unless the same shall be allowed of, or confirmed by the person administering the government of this state.

And Whereas, the removal of such manufactories, works, trades or businesses as are above intended, from the places where the same are now used or carried on, may be attended with expence to the proprietor thereof; to the end therefore, that reasonable compensation on that account may be made to such proprietor,

BE it further enacted, That whenever and as often as the Mayor, Aldermen and Commonalty of the City of New-York, shall order the removal, in virtue of this act, of any of the before described manufactories, trades or businesses from the places in which, at the time of passing this act, the same shall be used or carried on, it shall and may be lawful for the said Mayor, Aldermen and Commonalty of the said City of New-York, to treat and agree with the respective owners or proprietors of such manufactories, trades or businesses, respecting the compensation to be paid for such expences, and if any such owners or proprietors shall refuse to treat and agree in manner aforesaid, then and in such case, it shall and may be lawful, to and for the said Mayor, and Recorder, and any two or more of the said Aldermen, by virtue of this act, by a precept under their hands and seals to command the Sheriff of the said City and County of New-York, to impanel and return a jury of freeholders, to appear before the Mayor's Court of the said City, at any term not less than three weeks from the date of such precept, to enquire into, and ascertain the reasonable compensation, which under all the circumstances of the case, should be made to such owners or proprie-

ters, for the expences of such removal as aforesaid, which said jury being first duly sworn, faithfully and impartially to enquire into and ascertain such compensation, shall proceed to ascertain the same; and the sum found by their verdict, shall be paid by the said Mayor, Aldermen and Commonalty of the said City of New-York, to the said owners or proprietors, and shall be deemed as part of the contingent expences of the said city.

And be it further enacted, That in addition to the provisions aforesaid, if the owner or occupant of any lot shall refuse or neglect after convenient time to fill up, raise, reduce, or level such lot in such manner, as the same shall by any such bye-law, ordinance, rule or order, be required to be filled up, raised, reduced or levelled, it shall then be lawful for the said Mayor, Aldermen and Commonalty, to cause such lot to be so filled up, raised and levelled, and the amount of the monies which they shall advance for that purpose, with lawful interest for the same, shall be deemed a lien on such lot, and shall be recoverable by them as for monies advanced for the use of the defendant by suit against the then, or any future occupant or owner of such lot at their election.

And be it further enacted, That the act, entitled "An Act to prevent the bringing in and spreading of infectious distempers in this State," passed the 4th day of May, 1784, except the second section thereof, and the act to amend the said act, passed the 27th day of March, 1794, shall so far as respects the City and County of New-York, be repealed. *Provided*, That such repeal shall not be deemed to annul the appointment lately made of a physician to inspect vessels, in pursuance of the said act first mentioned, but the said physician shall be and hereby is declared to be by force of such appointment, the Health Officer intended in this act.

SECTION IV.

An ACT to amend the Act, entitled, "An Act to prevent the bringing in and spreading of Infectious diseases in this State."

PASSED 10th of FEBRUARY, 1797.

BE it enacted by the People of the State of New-York, represented in Senate and Assembly, That there shall be three persons appointed Commissioners of the Health Office of the City of New-York, who shall assemble from time to time, as occasion may require, at the Health Office, for the dispatch of the business to them entrusted: and that the said Commissioners, together with the Health Officer, for the time being for the said City, and who by virtue of his office, shall always be a member of the said office, or a majority of them shall be, and hereby are invested with all and singular the powers granted to the Commissioners of the Health Office for the said City, in and by the said act, entitled, "An Act to prevent the bringing in and spreading of Infectious diseases in this State;" and that from and after the appointment of the said three Commissioners, all the powers vested in the present Commissioners of the Health Office, shall cease.

And be it further enacted, That it shall be lawful for the said Commissioners and Health Officer, or a majority of them, from time to time, as they shall judge adviseable, to make and execute rules and orders for cleansing and scouring the streets, allies, passages, curtilages, sewers, yards, cellars, vaults, sinks and other places within the said city, and for removing all offensive or putrid articles, or substances which may be stored or otherwise collected within the said City, and all necessary expences in carrying the said rules and orders into effect, shall be deemed as part of the contingent expences of the said City, and shall be raised by the Mayor, Aldermen and Commonalty of the

said City, as the other contingent expences of the said City are raised: *Provided, nevertheless*, that all such rules or orders shall be reported to, and may be suspended or repealed at any time, by the person administering the government of this State.

And be it further enacted, That all coasting vessels coming from any place south of Cape May, although not subject to quarantine of course, shall be liable to examination, if the Health Officer shall deem it expedient, by some fit person to be by him deputed, who shall have such reasonable compensation for his services, and paid by the Commissioners, as they shall deem right; and that quarantine shall in all cases continue as many days as the Commissioners shall deem necessary; and that no vessel hereafter arriving in the port of New-York, otherwise, and subject to quarantine of course, shall be exempted from such quarantine, by reason of having previously touched or entered at any port within the United States, unless such vessel shall have remained in such port for the space of ten days.

And be it further enacted, That upon complaint being made in writing by the Health Officer, or either of the said Commissioners, to the Wardens of the port of New-York, charging any of the pilots of the said port with a breach of any of the rules and regulations, prescribed by or in pursuance of this act, or of the act, entitled, "An act to prevent the introduction and spreading of Infectious diseases in this state," it shall be the duty of the said Wardens, forthwith to suspend such pilot or pilots from piloting any vessel, until he shall have entered into a recognizance in the sum of two hundred dollars, with sufficient security before a magistrate, to appear and answer to the offence, at the then next Court of General Sessions of the peace, to be held in and for the City and County of New-York.

And be it further enacted, That from and after the first day of July next, no person shall dress sheep or lamb skins, or manufacture glue, nor shall any soap-boiler, or tallow-chandler, or starch-maker, or maker or dresser of vellum,

carry on any of their processes or operations of their said trades, which produce impure air, or offensive smells, such as trying or melting of fat or tallow, boiling soap, fermenting grain, or other substances for starch, washing, fermenting, or oiling skins, or vellum, at any place within the the city of New-York, south of the south side of Grant-street, and of the south side of the said street continued until it intersects the easterly side of Mulberry-street, and south of the west line, from the intersection aforesaid, continued to Hudson's river, under the penalty of one hundred dollars, for each offence, to be recovered in an action of debt, with costs of suit, by any person who shall sue for the same in the Court of Common Pleas, called the Mayor's Court, of the said city, one half whereof shall be to the use of the plaintiff, and the other half shall be brought into the said court, and by the order thereof, paid to the treasurer or chamberlain of the said city, to be disposed of to the use of the poor thereof, in such manner as the Mayor, Aldermen and Commonalty of the said city, shall from time to time direct.

And be it further enacted, That it shall be lawful for the Mayor, Aldermen and Commonalty of the said City of New-York, to treat and agree with such of the owners or proprietors of the manufactories, trades, or business, prohibited as aforesaid, for the taking down, removal and replacing the vessels and fixtures used in such manufactures and trades, in such part of the said city, in which such manufactories and trades may by this act be established and prosecuted, and in case no agreement can be made with the owners or proprietors of any such manufactories, or persons prosecuting such trades as aforesaid, then and in such case, it shall and may be lawful to and for the said Mayor and Recorder, and any two or more of the said Aldermen, by virtue of this act, by a precept under their hands and seals, to command the sheriff of the said City and County of New-York to impanel and return a jury of twelve freeholders to appear before the Mayor's Court of the said City at any term, not less than three weeks from the date of such precept, to inquire

into, and ascertain the reasonable compensation which should be made to such owners or proprietors, for such taking down, removal and replacing, as aforesaid, which said jury being first duly sworn faithfully and impartially to enquire into and ascertain such compensation, shall proceed to ascertain the same; and the sum found by their verdict, shall be paid by the said Mayor, Aldermen and Commonalty of the said City of New-York, to the said owners or proprietors, and shall be deemed as part of the contingent expences of the said City, to be raised and levied, and collected, as the other contingent expences of the said City, are levied, collected and paid. *Provided always,* that after such decision by the jury, it shall be optional with the said Mayor, Aldermen, and Commonalty, either to pay the amount of the compensation found by the jury, or within one month thereafter, at their proper expence, to take down, remove and replace, such vessels and fixtures in such place as the owners and proprietors thereof shall direct, and in such part of the said city, as by this act, such manufactories or trades as aforesaid may be established.

SECTION V.

An ACT to amend the Law, to prevent the bringing in and spreading of infectious Diseases in this State.

PASSED 6th MARCH 1797.

WHEREAS it is represented to the Legislature that there are certain manufactures of Soap and Candles in the City of New-York, whose works are so situated, and whose business is so carefully managed, as neither to endanger the health nor be offensive to their neighbors, Therefore,

BE it enacted by the People of the State of New-York, represented in Senate and Assembly, That the person administer-

ing the government of this State, with any two of the commissioners of the Health-Office, may in writing under their hands, permit all such manufacturers of Soap and Candles to remain and exercise their said trades, within the City of New-York, to the southward of the bounds, or line designated in the fifth section of the act entitled, "An act to amend the act, entitled an act to prevent the bringing in and spreading of infectious diseases in this State," any thing in the act to the contrary notwithstanding. *Provided nevertheless*, that such permits may, in the discretion of the persons having authority to give the same, be granted to such Starch-makers whose manufactories are not situated to the southward of fresh water, which certificate shall remain in force until the person administering the government of this State, and any two of the said commissioners shall by writing under their hands, supercede the same, on its appearing to them that such permission hath been abused, and ought to be withdrawn; and until notice in writing, that the same is superceded, hath been served on the person in whose favor the certificate was granted, or left at his or her dwelling house, and a copy of such notice fixed up in the clerk's office of the said city: *Provided nevertheless*, that no Tallow shall be rendered within the said limits, prescribed by the act above mentioned, from the fifteenth day of May, to the first day of November in each year.

And be it further enacted, That the street, called in the said act Grant-street, was intended and shall be construed to mean Grand-street: and that the street therein called Mulberry-street, was intended, and shall be construed to mean Mulberry-street, as the same streets are delineated on a map of the city of New-York, lately published by David Longworth in the said City.

 CHAPTER II.

PROCEEDINGS AT ALBANY.

 SECTION I.

TO THE PEOPLE OF THE STATE OF NEW-YORK, REPRESENTED IN SENATE AND ASSEMBLY—THE MEMORIAL OF THE SUBSCRIBERS, MANUFACTURERS OF SOAP AND CANDLES IN THE CITY OF NEW-YORK:

Respectfully Sheweth,

THAT your Memorialists feel all that respect for the Representatives of the People in the Legislature, and for the resolves and bills that are passed, which as good citizens and firm supporters*of government it becomes them to possess.

That when grievances beset themselves and their fellow-citizens, of a nature susceptible of legislative remedy, they conceive they have a right of presenting memorials and petitions, exhibiting the grounds and causes of their complaint, and praying for relief.

That your Memorialists have read with great concern and alarm, the act, entitled, an act to amend the act, entitled an act to prevent the bringing in and spreading of infectious diseases in this State, passed the tenth day of February, one thousand seven hundred and ninety seven, whereby Soap-boilers and Tallow-chandlers are prohibited, after the first day of July next, from carrying on any processes or operations of their trades; and the trying and melting of fat or tallow, and the boiling of soap within the limits mentioned in the said act, interdicted under a severe penalty.

That by the provisions of the said act, the Manufacturers of Soap and Candles are reduced to the hard necessity of either discontinuing their business, or of removing beyond

Grand and Mulberry Streets ; a forlorn dilemma, which in one case terminates in certain distress, and in the other, notwithstanding the compensation contemplated in the act, will be attended with the ruin of the greater part of your Memorialists, and with great difficulty and embarrassment to the rest.

That convinced as your Memorialists are, that private interest should not be set in opposition to public good, they would meet the impending calamity with firmness, and bear it with fortitude, were it true that their occupations were productive of sickness or diffused pestilence through the air of their neighbourhood. Nay, if this was the case, so far are your Memorialists from wishing to continue as they are from selfish motives, that rather than poison a street or a neighbourhood, they would of their own accord either remove or shut up their works.

That believing there is a misconception concerning the nature of the vapours of their manufactories, and that owing to some remote analogies, these exhalations, though innocent, have been classed with others which are indeed noxious in a high degree ; and confident at the same time, that the Legislature are willing to investigate the subject to the bottom, and search out the *whole* truth ; your Memorialists crave permission to be heard on the merits of their application by a candid enquiry into facts.

That as by reason of the remoteness of the Legislature from their place of residence, they were not apprised of what was doing soon enough to make opposition to the bill during its progress, they are desirous of exhibiting at this time such evidence, to shew the harmless nature of their occupation, as if, had it been possible to have produced in due season, would, they trust, have satisfied the Legislature that it was superfluous or needless to have included them within the act.

Your Memorialists, therefore, respectfully request that they may, at such time as shall be assigned for the purpose,

be heard by Counsel at the bar of the House in support of this, their Memorial ; and if thereafter, it shall seem safe and proper, the aforesaid act, as far as it respects Soap-Boilers and Tallow-Chandlers, may be repealed.

And your Memorialists as in duty bound,

Shall ever pray, &c.

SECTION II.

REMARKS ON SOME LATE PROCEEDINGS OF THE LEGISLATURE OF THE STATE OF NEW-YORK, RELATIVE TO THE REMOVAL OF CERTAIN TRADES AND MANUFACTURES FROM THE THICKLY SETTLED PARTS OF THE CITY OF NEW-YORK, IN AN APPLICATION OF THE MITCHILLIAN DOCTRINE OF SEPTIC FLUIDS TO THE PROCESSES CARRIED ON IN SEVERAL BRANCHES OF HANDICRAFT BUSINESS, PARTICULARLY THE MAKING OF SOAP AND CANDLES ; BEING THE SUBSTANCE OF THE ARGUMENT EMPLOYED AT ALBANY IN MARCH, 1797, TO PROCURE THE REPEAL OF PART OF THE PRECEDING LAW, (OF THE 10th OF FEBRUARY, 1797.)

LIKE a calm observer, their Counsel said he had beheld on several occasions, the legislature engaged on subjects of a chemical nature. The most important of all these, the prevention of infectious and contagious distempers had again and again been agitated by the Representatives of the People. Regulation had succeeded to regulation, and project given way to project in such rapid succession, that he hoped before this time, by the joint efforts of those who were engaged in the reforms, a system of rules well-digested and complete in their more material parts, would have been elaborated. He was afraid, however, that a great deal was yet necessary to

be done. He was also apprehensive there had been some things done, which it had been better to have left undone.

He alluded to the Act passed during the present Session, entitled, "an act to amend an act, entitled, 'an act to prevent the introduction and spreading of infectious distempers within this State,'" which, as the Memorials, Remonstrances and Petitions presented to the Legislature, sufficiently express, is considered in some of its parts as bearing extremely and unnecessarily hard upon a valuable and industrious body of Citizens.

The Petitioners for relief from the oppression of that Law, as well as himself, were inhabitants of the City of New-York. He trusted they were all guided, and governed by the same desire of rendering their place of abode comfortable and wholesome. The respirable quality of the atmosphere they lived in, was a matter of eminent concern to them all.

From vitiated air, had it of old been believed, that epidemic distempers derived their origin; though in the times of rudeness and superstition, it had been considered as a mark of piety to refer all visitations and calamities of this sort to the anger of the gods, or at least to the displeasure of Heaven. This short way of philosophising was in no wise calculated to satisfy the curiosity of an enlarged mind. By degrees however, after a series of observations, extended from the 400th year before the Christian Æra, quite to the present day, it had become established as a settled fact, that those wide wasting diseases, the plagues of ancient times, by which several sea-ports and country places in the United States, had within a few years, been dreadfully afflicted, were mostly connected with a pestilential condition of the air.

To comprehend how the wholesomeness of the atmosphere should be destroyed, either by a privation of that portion of it, which ministers incessantly to the support of life, or by letting loose vapors and exhalations of a nature noxious

enough to poison the animals who live and move on it, required an extent of experimental research, which all the accumulated industry of the past ages, had never until very lately accomplished. It now was admitted on all hands, that though something of an unfriendly composition, might be formed in the clouds, by the association of the particles of one kind of air with those of another, yet the principal mischief arose in the form of steam from substances *on or near the surface of the Earth.*

Since then the explosion of the astrological motion of the malign aspect and influence of the stars, and other bodies above their heads, the eyes of mankind were turned downward in search of the cause of the inconvenience they endured, from some source beneath their feet. After a course of various observations and experiments, it had been discovered, that the greatest degree of vitiation which the atmosphere manifested by its operation upon the human frame, proceeded not from *earthy or metallic bodies*, but was a somewhat emitted *from certain animal and vegetable substances during putrefaction, and floating about in a volatile form.*

What the nature of these *new aërial fluids* was, had remained for a long time utterly unknown. Since, however, the dead body of an animal or plant, disappeared almost entirely by exposure to wind and weather, and left but small traces of its former existence behind, doubts had been entertained concerning the vulgar notion of their return to *earth*, as they seemed rather to be resolved into *air*. The perfect transparency of such a fluid, as it reflected no light, put it out of the power of the Eye to examine what it was, even when assisted by the most perfect glasses. Its yielding and impalpable nature evaded examination by feeling and handling, and eluded the nicest exercise of the sense of touch. Thus its want of visible and tangible properties had rendered an examination of its peculiar nature, for a great while, very imperfect. And even since the introduction of vessels of glass into laboratories, it had not been possible to investi-

gate thoroughly their history, in any other way *than by attending to their combinations with other bodies by means of Chemical Attraction.*

In attending to the changes which plants and animals underwent after death, it at an early day had become apparent that the air into which they were converted was not *always* of a hurtful kind ; that some species of both classes of beings would rot without causing any mischief at all, while other individuals of either sort, while they underwent corruption, were, though not always, yet frequently noxious ; and at best, of a suspicious character. Mankind, by attending to the subject, in all possible ways, had discovered at last, *that some putrifying substances would afford no pestilential air at all, and others that were capable of yielding it, would only do so under certain circumstances.*

But before the human mind had progressed far enough, to come to any definite conclusion on the subject, camps had been desolated, armies cut off, and cities depopulated by pestilence. In contemplating these distressing events, though it was obvious enough, the morbid cause must have originated *locally*, or have been generated on the spot, both in the field and garrison ; still so great had been the reluctance of mankind in settled and domestic life, to allow their city or place of residence to be unhealthy, that in the history of all ancient and modern plagues, a belief has almost universally prevailed, of their introduction from some *foreign place*. The Yellow-fever of New-York, and the other commercial cities of America, for instance, if you might give credit to a multitude of testimony, had been always imported from some distant parts, commonly from the West-Indies ; the inhabitants of those Islands agreed among themselves in disclaiming its origin there ; but differed whether it was of Asiatic descent, from the climate of Siam, or of African production in the latitudes of Guinea. Had the Malays or the negroes the custom of reading our performances, and writing books of their own, they would doubtless feel an equal desire to wipe away these aspersions, and contrive

Stories as plausible as many of ours, to countenance its introduction by some infected Traveller from Ethiopia, or sickly Sailor from the Philippine Islands—In like manner, the Athenians of old, though surrounded on the land side by their Peloponnesian foes, and grievously incommoded on a thousand accounts, as they were cooped up within their citadel and walls, flattered themselves the plague they suffered was imported into their harbour from Egypt. A late sensible Traveller had observed that it never arises in Cairo spontaneously, and affirms it is always introduced from Constantinople. The people of this Turkish capital, comfort themselves it did not spring up originally there, but was brought from the northward, by certain foggy or unwholesome winds that had blown across the morasses in the neighbourhood of the Euxine.—These prejudices which had been fostered and cherished in most sea-port towns, by the spirit of commerce, were at this hour, happily wearing away. It redounded inexpressibly to the honour Americans to be the first to cast them off. Those pestilential out-casts, whom nobody would own, but whom every body sent as vagrants and vagabonds from country to country, were beginning to obtain an acknowledged and legal settlement. They were the monstrous offspring of our vices. Deformed and hideous as they were, the parentage and filiation was ours, and as we begat them, we should not refuse to own them. If the reports, which, until a few years, had invariably prevailed, were traced there could not be found a spot or corner of the civilized globe, which gave birth to them. If on the other hand, attention was given to facts, there was not a city or town in the United States, whether sea-port or mid-land, nor a house or habitation in either, wherein Pestilential Diseases might not arise. The truth is, *they might and did arise in most places, where corruption and nastiness abounded, and of course were generally, not of foreign derivation, but of domestic origin.*

Thus pestilential vapours might be produced from some of the bodies of plants and animals, or some parts of them,

undergoing disorganization, on the surface of the earth, which being made volatile under certain circumstances, so contaminated the atmosphere as to cause endemic and epidemic distempers.

He remarked, that this offspring of putrefaction, though too attenuated to affect the sight, or the touch, was attracted by other bodies. This was particularly the case with respect to the *ashes* afforded by wood burned upon the hearths of dwelling houses, and by the *plaster*, which constituted their walls. Long ago had it been known, that the scraping of the matters collected near doors, in ditches, yards, out-houses and stables, as well as the decayed walls and old rubbish of dwelling-houses, were exceedingly useful in the fabrication of salt-petre. This was so well known and understood, that under the administration of the late kingdom of France, the manufacturers of the article, were not only incorporated in the city of Paris by their sovereign, but were allowed to take away from demolished buildings, as much of the old mortar as they pleased, to encourage the domestic production. And notwithstanding the fuel of that vast city was chiefly wood, such had been the accumulation of putrid vapours in the salt-petre-beds, that the Academy of Sciences, who were directed to examine and report on the subject, had recommended the mingling of imported pot-ash with the crude materials, as a means of procuring salt-petre in the most expeditious way, and in the most abundant quantity.*

In these alliances then, which *putrid* vapours form with alkaline salt and calcarious earth, they had been subjected to the most rigorous examination, and analyzed with scrutinizing exactness. It had accordingly been proved by trials made on the effluvia steaming directly from corrupting substances, that they were arrested by chalk † and soda, as well as by the substances enumerated; and thus, he

* See Appendix, Note A.

† See Appendix, Note B.

concluded, the *observations of house-keepers corroborated the experiments of philosophers, and both received confirmation from the processes of the salt-petre-makers.*

The sum of the testimony from these three sources, was, that *pot-ash* and *lime*, saturated or neutralized the *putrid exhalations* they attracted ; that being both of them of alkaline nature, they shewed by their analysis, the material they had drawn from the air, was of an *acid quality* ; and that this acid, which, with the saline ground, formed common nitre, and with the earthy basis, constituted calcarious nitre, was the *Acid of Putrefaction*.*

As far as the almost innumerable mass of facts on these and similar subjects, had been stripped of foreign and adventitious circumstances, and generalized in a scientific and logical manner, there existed the most cogent evidence, that the production just named, and some of its modifications, formed the pestilential poison ; that under the medical names of *Human Effluvia*, and *Marsh Miasmata*, and he scarcely knew how many other titles, was commonly called in popular phrase, *infection* or *contagion* : the operation of which, occasioned such mortality and terror among the people, and which the Legislature had with such laudable solicitude, been engaged in guarding against.

He had judged it the more necessary to bring forward to notice, the facts tending to shew the exact and precise nature of pestilential fumes : because through the whole course of his reading and conversation, they appeared to be considered as unknown combinations of elementary atoms, equally unknown ; mysterious and inexplicable things ; engendered from the chaos of organic dissolution ; productions so equivocal, it was hard to know what to call them ; surpassing, as some believed, all mortal comprehension, and lying far beyond the limits of human understanding.

* See Appendix, Note C.

If his attempt to state what it was, had been successful, then might we be considered as having caught nature in her work-shop, examined her collection of raw materials and discovered which of them she employed in this fearful manufacture, which like the *poisoned skirt of Hercules*, enwraps the wearer too closely to be shaken off. Then both the philosopher and the statesman would have clews to guide them through the labyrinths of Science and Legislation.

From whatever substance, therefore, the *acid of putrefaction* was produced, it would be killed in the egg by *lime** and *alkalis*, if they are present. They could quell, subdue, overpower it. They were the Ichneumons which destroyed the unhatched and yet harmless Crocodile. If they were not at hand, the new-born Monster, fostered and nurtered by heat, acquired the fury of a Dragon, soon took wing, and flew about the Land.

It might, perhaps, be thought a digression from the subject under discussion, if he dwelt at large upon the trades, occupations and employments wherein sickly exhalations are generated. *Rammazzini* had written well on this subject before him. Instead, therefore, of going the round of a particular enumeration, he should just observe that this Septic Poison might be considered as experimentally proved to exist in city and in country, in the houses where domestic animals, both birds and quadrupeds were kept, and discharged their dung and urine ; in Privies and the receptacles of human ordure ; in grave-yards, and the earth surrounding the buried Bodies of Men ; in clothing, bedding and furniture impregnated with secreted matter and perspiration ; in the corrupted blood and offal of beasts slain for the market ; in the skinny and lean parts of animals, particularly rotten hides, beef and fish ; in putrefied wheat, coffee, cabbages, and certain other vegetable substances ; and in that mixture of these and other dangerous materials, which formed the evaporating, foulness of the New-York streets, and the dismal collection along the river-side,

* See Appendix, Note G.

This *pestilent acid* is most easily dissolved in water. Travelling in company with this guide, it gradually soaked thro' the earth on which cities were built, insinuated itself into the recesses, whither this all-pervading fluid found its way, and took up its abode or gained admittance into cisterns, wells and fountains. Even here its alkaline foes attacked and seized it. They grappled with it, and held it fast, until the contending champions could be brought up to day-light, and viewed as they lay clenched in close encounter. After the conflict and effervescence which always attended their meeting was over, the two friends for a while were commonly victorious ; but exhausted and overpowered at length, their salutary efforts were but of little avail, and poison predominated in the Reservoirs.*

To an observing mind, the history of man presented an abundance of similar truths. He presumed almost every person had learned from the newspapers a description of the dungeon of Olmutz, where the unfortunate La Fayette lingered in captivity. The victim of a vindictive policy, he there received little consolation from human friendship. Still he was not without a friend. The *lime* which cemented the stones of his dismal apartment, attracted the deadly vapours which threatened his life, and formed with them the *nitrous efflorescence*, which crept along the walls.

The bills of mortality shewed that large and crowded cities were unfriendly to the rearing of children to manhood. Was it wonderful ? The infant inhaled pestilence with the air which first expanded his little lungs, absorbed it at every pore, swallowed it with the tainted milk of the mother's breast. The water which slaked his thirst, and the food that supported his strength, were contaminated with the same mischievous ingredient. And this operating in so many ways upon his tender frame, brought it to a premature dissolution, unless it should be hardy enough to become seasoned by degrees to the poison, and grow insensible of its

* See Appendix, Note D.

effects. What hapened to the child, hapened also to the parents. The air, the earth, the water ; food, clothing, bedding, all became more or less tinctured with *septic matter*, produced in a great degree from substances collected by their own hands, employed with the most perverse of possible industry, in *forming the tissue of this domestic manufacture.*

The *Soap-Makers* and *Tallow-Chandlers* of the City of New-York, were considered by the bill, which had been passed during the present sessions, as contributing largely to the mass of pestilential vapours. These useful citizens considered themselves aggrieved by the judgment the Legislature had passed upon the business they followed. They felt a confidence the effluvia from their manufactories, did not impair the health, far less destroy the lives of their fellow-citizens. If the occupation did, like *THE UPAS-TREE*, spread around the spot where Soap and Candles are made, desolation and death, they would not only submit to the imputation and its inconveniences without a murmur, but in a public-spirited manner, would applaud the justice of the statute.

He should examine the subject in two ways. First, Upon its Principles : and Secondly, Upon its actual operation ; and he had little doubt it would appear upon discussion, to be a harmless occupation *generally*, and even capable sometimes, of counteracting the effects of contagious and infectious vapours.

From the facts heretofore adduced, he believed there would be little need of stating additional evidence to prove that *Lime* and *Potash* were constantly engaged in baffling the powers of pestilence, and fighting the battles of health. Those articles formed a large part of the materials with which the manufacturers alluded to, carry on their business. It would be a most remarkable discovery, that a law of nature, which acts uniformly in other instances, in making these exhalations submit to alkaline dominion, should fail to operate, or should suspend its efficacy as to this. But

there was no such irregularity known to exist. The septic acid fumes which infected the air of the inland country, oftentimes as much as of sea-ports, and made, in proportion to numbers, as great havoc in interior towns, as in any place whatever, yielded to the coercion of *Potash* around the letch-tubs of Cobus's kill, as well as in the soap-works in our capital. Nor was the *Lime*, which was always employed to give sharpness to the ley, inactive in other respects. So far from remaining idle, it had no sooner whetted the weapons of its ally, than it prepared to attack, though with feebleness, the common enemy both of themselves and of mankind. He might appeal to the knowledge which many of the members of the Legislature had of the method of managing Pot-ash-works, whether ever a pestilential distemper was generated there? There was no such thing known. The dæmon of pestilence would be instantly arrested on shewing his face there, and so closely confined and guarded, that he never could escape and prowl about for human prey any more. The lixiviation of ashes then, and the extraction of its alkali, seemed to be excused on every consideration, from having any agency in this *destructive work, both in town and country.*

Here, however, it had been alleged, that the *Fat* which constitutes the other part of the soap, and the whole of some sorts of candles, putrefied and emitted exhalations of a quality so deleterious, that a wise policy should prohibit the carrying on the processes, for which the oily parts of animals were collected, and by which these alarming vapors were supposed to be extricated. If this charge could be supported, then indeed ought the law to be carried forthwith into execution. But he did not know any *facts* which countenanced such an opinion. The true interpretation of them led to an opposite conclusion. He then proceeded to examine them.

The distillation of animal fat in close vessels, saving the sebatic acid, gave no volatile salt at all; far less any fluid possessing the qualities complained of. Its constitution was

such, that the peculiar ingredient which became the basis of noxious airs, and without which, the truly pestilential compositions could not be formed, resided not in it. Hence though it might become rancid and smell disagreeably, the effluvium was not poisonous. From the nature of the material, every house-wife knew, that though the *fat* might smell as bad as the *lean*, it did not turn to rottenness in the same manner.

Again, repeated observation had assured us, that on the escape of the noxious ingredient from animal substances decaying in large heaps, as happened in the public burial ground of the city of Paris a few years ago, the residuary portion turned to lumps of *fat*, almost as firm as sperma-ceti. This fact was so well established, that economical projects had been formed to decompose the carcases of animals under water, in such a manner, that while the pestilential matter inherent in the blood, skin, brawn and muscles, gradually escaped into the water, the residue of the lean parts turned to fat. Need he dwell upon the statement of other facts of this sort, which the periodical publications of Europe for several years past, have announced to the world so often?

Further, it was in the power of art to imitate these processes of nature. The operation was as easy as almost any in chemistry, by driving off the specific portion, whence pestilential air was generated, to convert a bit of the leanest beef into fat or tallow. During the continuance of life, the harmless atoms, which by their binary union, constitute fat, restrained the disorganizing efforts of their partner; but when the partnership among the ingredients of a muscle was dissolved by death of the animal to whom it had belonged, pestilence sallied forth, free from restraint, and disclaimed his *greasy* connection. It was to the gentle, but firm operation of this very fat, so much complained of, or of the elements from which it might be formed, that the pestilential matter of our bodies, is in a good degree, held in bondage during life, and prevented from exercising those destructive powers upon its own constitution, which

on its enlargement, act with deadly malignity upon others. The whole of the phenomena of the composition of living muscles, and the decomposition of dead ones, held forth this truth, *that neither oily substances, nor the materials of them, contained pestilential poison, or its essential ingredients.*

Besides, New-York afforded monuments enough of the efficacy of oil, even under the disadvantageous form of mixture with metallic bodies into paint, to evince its power of arresting infectious vapours. Look at them (continued he) in their filthy birth-places, the bottoms of the slips and docks. See them aim at the timber of the vessels, that at low water are grounded there in the mud. Behold the oil quit its union with the white-lead with which it had been mixed, and turn black by destroying the acid, which was endeavoring to eat through to the planks. View these pestilential steams as they rise and exert their destructive effects upon the neighbouring houses. Direct your eyes to the blackened sign-boards, where the oil has so long withstood their assaults,* that scarcely a letter of the inhabitant's name is legible. Enter the rooms, and see the vapors, which the oil has so firmly resisted, thicken, destroy the birds in their cages, and doom their owners to the grave. He added, that these facts, which were as public as the market, and obtruded themselves upon the notice of every passenger, would, if fairly interpreted, bear witness to the solidity of his argument.

Once more : it was well known that several acids, and particularly the *acid of putrefaction*, was decomposed very readily by *fat* and *greasy* bodies, and that so rapidly, as with many sorts of oils, to burst into flame. This capacity of acids, to combine with animal fats, was so well understood, that *acid soaps* had been manufactured. But the experience of mankind had long ago shewn, that they were unfit for rendering substances clean. They had accordingly been discarded from the arts, through practical conviction,

* See Appendix, Note E.

not theoretical opinion. Could a soap, he asked, compounded of fat and a pestilential acid, neutralize and remove infection from tainted clothes? What but an alkali could drag it from its retreat, entangled as it was with the woof, and intertwisted, as it were, with the filaments of the cloth? It was the ultimate and irrefragable proof of a principle, when inferences and deductions from it, coincided with common sense and the experience of ages. The true reason why Alkalis are preferred as the bases of Soaps, was, that they deterged the excreted matters which stick to our garments, whose acidity when accumulated and concentrated by extreme frowziness and long lying or wearing, first *reduced the fabric to rottenness and rags, and then turned to pestilence.* He thought the history of prisons afforded ample confirmation of this conclusion.

These considerations led to the conviction that *oils and fats were not capable, from their composition and nature, to afford pestilential air; that they either neutralized or decomposed acids, and thereby weakened or deadened the Power of Contagion.*

Lime, Pot-Ash and Fat, thus were antidotes to contagion, in *their distinct and separate forms.*—The cleanliness and health attendant on the *combination of them into Soap*, was so evident to every body, that there was no need of offering a word on that part of the subject. Though he could not pass it over, without remarking, that it was a very curious and singular event in the annals of Legislation, that a *Manufacture*, whose ingredients, whether considered separately or in composition, were labouring with an effect, which almost exceeded calculation to diminish the causes and frequency and violence of epidemic fevers, should, in the present state of science, and near the close of the eighteenth Century, and in a *American Republic* too, be treated by a Legislature as *an internal hot-bed of infection!*

He proceeded in the second place, to enquire whether the reasoning he had used was bottomed on experience? In or-

der to determine this, he exhibited a few examples to shew that men might deal in oil and fat in all their forms, both vegetable and animal, externally and internally, without being subject to plague, yellow-fever, or any distemper that resembles them.

He said, the *whale fishery* afforded instructive evidence to this point. That industrious and enterprising body of people who sent from Nantucket, vessels and seamen to make war on the inhabitants of the ocean, knew that the effluvium of animal oil was not pernicious. They found their huge prey in all latitudes between the region where Disko borders upon the Arctic Circle, and that where in the opposite hemisphere, Georgia, the extreme of habitable land, stretches toward the South Pole ; and in all longitudes betwixt the tract of Eastern Ocean which separates Madagascar from the African Coast, westward to the parallel where Juan Fernandes, rises above the waves of the Pacific. Through this extensive range, the Whalemen took on board their blubber, and either subjected it during the voyage to the operation of fire, whereby it might be separated from the skin and membranes, or brought it home barrelled up in large junks, to be tried or melted in their houses on shore. Such a vessel was filled with the exhalations of oil, putrefying in the casks and smoking from the boilers. The men, their clothing, the oars of their boats, yea, the deck they tread upon, seemed to be penetrated through and through with them. Yet strange as it might appear, these voyages were among the most healthy which are performed. It was a rare thing to lose a man during a run of eighteen months or two years, by sickness. However common distempers might be in the navy, in the transport, and in the merchant-service, there was no instance known of a putrid or malignant fever, caused by stinking oil or its vapours, sweeping off the crew of a whaleman.

He observed that *the customs of the Caffrarians*, nasty and disgusting as they were, afforded, among many other instructive particulars, an example of the harmlessness of *fat*.

and oil. The rank and horrible grease with which they besmeared their bodies, never excited fevers, nor pestilential distempers. On considering the poisonous atmosphere of Java, which the young civilized Hottentot, mentioned by Rousseau, had been accustomed to breathe, our wonder at his determination to rejoin his countrymen, at the Cape of Good Hope, ought almost to turn to a sentiment of approbation, when we reflect, that as he had long lived with his naked skin exposed to the corroding vapours of Batavia, he longed to be once more a member of a society, whose customs would permit him, *to shield himself from Pestilence by Unction with Grease.*

The Jewish rites, which were detailed with so much minuteness in the book of Leviticus, were quoted as perfectly conformable to the principle under consideration. Their *sin-offering of ignorance* was made by taking “all the fat of a bullock, the fat that covereth the inwards, and all the fat that is upon the inwards, and the two kidneys, and the fat that is upon them, which is by the flanks and the cawl above the liver;”—this was ordered to be burned by the priest upon the altar, and might be done amidst the people; “but the skin of the bullock and all his flesh, with his head, and with his legs, and his inwards, and his dung, even *the whole bullock* shall he carry forth WITHOUT THE CAMP, into a clean place, WHERE THE ASHES ARE Poured OUT; and burn him on the wood with fire; WHERE THE ASHES ARE Poured OUT, there shall he be burnt.” Such were the regulations of Moses for atonement of the *sin of ignorance* in *priests*; and with variations of *young bullocks, kids of the goats, and lambs*, was conducted in much the same manner for the same sin in the *congregation, the rulers and the people*. He knew not of any mention of pestilential diseases caused by the effluvia of *burning fat*, in any of these and other numerous sacrifices of this peculiar people, though it was probable the inconveniences arising from the consumption of the other parts at, or near the altar, might have brought the Jews to the practice of carrying them among the ashes without the camp.

Had the fumes from the fat, been of a destructive nature, the priests must have soon expired beside the victims. It was not probable that under a theocracy, where the ministers of religion were held in such high reverence, a duty would have been assigned them, the performance of which was unavoidably attended with the inhalation of noxious and deadly air. So far from it was the practice reckoned, that it was called "a sweet favour." He believed it would be sound policy to let the Manufacturers of Soap and Candles remain where they are ; and while they were happy in offering *peace-offerings* and *trespass-offerings* with their fat, and labouring to purify and illuminate the city, the RULERS might order what processes upon the *other* parts of animals, the PEOPLE should carry on WITHOUT THE CAMP.

The fumes of animal oils, were thus (he continued) harmless in their operation, while they were putrefying, boiling in kettles, and burning in the open fire ; and so were the *fats* themselves, when in either their mild or rancid state, they were daubed upon the human skin.

Nor were their effects less remarkable when considered as articles of diet. There was an ancient story that the gift of the Olive was judged more beneficial to mankind, than that of the Horse. The oily product of this vegetable and of several others, entered very largely into the food of the Southern Nations. The Esquimaux of the North regaled himself when hungry, with a draught of the oil of a Sea-Dog or a Whale, and this without detriment, even when it was in a most rank and offensive state. These examples might suffice to give an idea of the operation of fatty and oily substances upon the stomach and bowels. He must omit the regular Dietetic consideration of them, as such a discussion would lead him too far from his purpose.

Yet it had been urged, after all this, that if these Manufactures were not pestilential, they were intolerable *nusances* ; that they generated *impure* air, and ought to be turned out of town.

It was true, he allowed, that in the sense of the word *nusance* as a term at common law, these Manufactures might be

so badly conducted as degenerate to *nusances*. This had been frequently the case in England, and indictments had been brought and proved against them. But the application of this term and the meaning commonly annexed to it, shewed that there must be something capable of being *seen* or *smelled*, or *both*, in the air, according to common acceptation, to proceed upon in a complaint of nuisance. If the *Eyes* and the *Nose* were not offended by *smoke* and *stench*, then it was generally believed that things go on well enough. He believed there were few or no instances of indictments found, where the transparency of the air was complete, and where the nostrils were not saluted by bad odours. Yet, so the thing was, and it was of great importance to be understood, *that an effluvium of a most fetid nature might exist, without a particle of infection* : And, on the other hand, as the history of most epidemics evinced, *an exceedingly virulent and destructive condition of the atmosphere did exist, with scarcely any sensible qualities at all*. The former were the *nusances* which had usually been contemplated in common law. The latter in which the interests of society were infinitely more concerned, had been passed over as of no moment whatever. He wished this matter was understood by Grand Juries. It would be their duty to present a *pestilential state of the air, however free from opacity and odour, as the greatest of nusances*, and find bills against all places and things which produced it. This probably would never happen until they should be convinced that though a pestilence might be accompanied *accidentally* with *haze* or *stench*, yet its most formidable effects were felt when neither the *sight* nor the *smell* gave any evidence of its presence. It went about unseen, and approached like a thief in the night. It was, however, within the jurisdiction of our Courts, and ought to be treated with the rigour of stern justice. Then should we not be “ afraid for the pestilence “ that walketh in darkness, nor for the destruction that a- “ waiteth at noon-day.”

If still, while the great sources of mischief and misery were left unregarded, a few Manufacturers and Tradesmen must be selected from the rest and offered up as a sacrifice to such

undiscriminating policy, why proscribe them by statute? If their occupations are nuisances, they must be either of a *public* or of a *private* nature. On proof of their being *public nuisances*, the common law provides that the sheriff may enter with his *Posse Comitatus* and abate them. If an individual offends by erecting or continuing a *private nuisance*, the aggrieved neighbour has his remedy in a civil action for the recovery of damages. By this innovation, the trial of fact, nuisance or no nuisance, by a Jury of the vicinage, was taken away, and a new tribunal instituted to decide upon the rights, properties and privileges of freemen. The citizens asked if this was done in the spirit of deliberate and careful Legislation? They were importunate to know what deep researches their Representatives had made in these inquiries, beyond the Magistrates of the cities of Europe, and the Philosophers of both hemispheres?

All this, it would be said, was true in theory, but not capable of being reduced to practice. On complaints made, Grand Juries were slow in finding bills, and traverse Juries reluctant to bring in a verdict to their neighbours' detriment. That, however true the doctrine was in the abstract, there was vast difficulty, often an impossibility, of carrying the principle into effect. Therefore, there grew a necessity to adopt some other mode of managing these matters. In short, Jurors, it was alledged, would not do their duty, and some other persons must be got who would. Suppose jurors as delinquent as they are stated to be, and that *Commissioners of Nuisances* have in some instances their use, there was no need of them in the present case. It had been proved already, and there were certificates and opinions enough, besides, if there was any need of them, to satisfy every mind, that the Manufacture of Soap and Candles might be carried on in the City without endangering the Health of the People. And as to the offensive and suspicious part of their business, these Tradesmen would voluntarily, without murmuring, and without public expence, render their *crude tallow and butcher's Fat*, in some remote place, where nobody would be annoyed by the vapours they emit.

He was aware it had been alledged, the vapours these substances emit rendered the air *impure*, and processes affording *impure* air ought to be prohibited, lest the health of the Citizens be injured by it. The meaning of this word, (one of the words of the act) he said was so vague and general, that it was hard to find out its particular application. It might signify air loaded with *smoke* or *dust*, or any thing which spoils its clearness, and mingles with it foreign matter. These, indeed, rendered the atmosphere *footy* and *dirty*. It might be interpreted to express the exhaustion of the respirable part of the atmospherical mass, the *empyrean* or *pure air*, and consequently leaving the residue deprived of its vital portion; and in this sense of the word, the burning of all fuel, the calcining of metals, the formation of vinegar and all acids, were processes exceedingly productive of *impure air*. Or it might intend that *odorous* bodies made air *impure* by diffusion of their particles abroad, and then camphor and tallow, ambergris and rotten eggs, the rose and the tan-vat, the tar-pot and the solutions of sulphur and phosphorus, all contributed to the *impurity* of the air. Or it might mean, lastly, that something of a destructive nature, not to be smelled or seen, was diffused through the air, and rendered it *impure*; then the formation of *fixed air*, *ammoniacal air*, *inflammable air*, *phlogisticated air*, *dephlogisticated nitrous air*, and *septic acid air*, and of every other sort of air, except *empyrean* air, was a process, whereby *impure*, that is *non-respirable air*, is evolved. Each of these aerial productions was constantly mingled, in a greater or less quantity, with the common atmosphere, especially that of cities, and every one of them in its pure and unmixed state, was either directly noxious, or at best, possessed no life-exciting power.

The truth was, that *vital air* in its *pure form*, was found by sufficient experiments, to be too keen and stimulant for the purposes of health and longevity. To guard against this exhausting effect of an atmosphere *too pure*, the Author of Nature had tempered it so that to about one fourth of air of a vivifying quality, there were added three fourths of an air

possessing no properties of a kind adapted to regenerate the pulmonic blood, and keep the heart in motion. *Three fourths* of the air we are obliged always to breath, was *impure* already, and mankind lived the longer for it. Less than *one fourth* of vital air would answer the purposes of life very well. When the *purity* of air was talked of then, if it meant mere and undiluted vital air, it meant a condition of things inconsistent with the natural constitution of this world; if it meant the ordinary atmospheric mixture, then it meant that salubrious state of it, wherein three quarters were already *phlogisticated* or *foul*.

Thus, considerably less, he concluded, than a quarter-part of *pure* air in the atmosphere, would answer the wants of animals. There were only certain processes in nature and the arts, and they were very well understood, which destroyed the respirability of the atmosphere. There were a thousand things of the volatile and odorous kind, which though diffused through the air, and thickly too, seemed not to lessen its respirability in the least, or in any measureable degree, nor to possess any thing hurtful. There were other things of a volatile, though not odorous nature, that might do vast mischief by inducing fevers, without rendering the atmosphere unfit for breathing; and some that might at once possess qualities directly deleterious to man, and destructive to vital air. The *septic acid exhalations*, rising from certain putrefying bodies, were of this latter kind. Though their pestilent qualities were so dismally known by their effects, yet as their transparency, tenuity, and want of obviously sensible properties, rendered it difficult to catch and analyze them, so they have scarcely ever been taken into the account, in estimating the *impurity of air*.* To make language precise, that constitution of the atmosphere which brings on plagues, and other distempers of a similar nature, ought to be designated by the term "pestilential," rather than "impure."

* See Appendix, Note F.

He did not pretend to doubt that the Legislature might wholly forbid and prohibit particular manufactures. Consequently they might limit, modify and direct the method of carrying them on. The power of regulating trades and mechanic arts, among other things, unquestionably resided with these representatives of the sovereignty of the people. But, he believed, it was equally clear, that though the Legislature possessed this power, they were under a high and solemn obligation to employ *discretion* in the use it. It was was a great misfortune, when Legislatures meddled with what they had better let alone. It lessened respect for the laws, and disposed the citizens to neglect or break them. The spirit of a free government made a voluminous statute book necessary. A complicated mass of laws, was one of the consequences of complete civil liberty. Where little or nothing was left to the *will* of individuals, *legal* provisions must be very minute, and extend to the detail of things. On no pretence whatever then, should the code be swelled needlessly, or laws enacted upon wrong principles.

There was proof before the Legislature of the laborers at manufactories of Soap and Candles, having a remarkable exemption from the Plague of Philadelphia in 1793. The same sort of evidence was afforded by three several manufactories of similar articles, within the limits of the Plagues of New-York, in 1795 and 1796. It had been remarked with surprize, and talked of as an unaccountable thing, in Great Britain and Ireland, that during the rage of Epidemic fevers, the people who followed these branches of business generally escaped, and oftentimes many of their neighbours also. Accordingly the police of the best regulated cities of Europe, had not treated these manufacturers as stirrers up of pestilence in their municipal regulations. He thought it might be collected from the relations of travellers, that the pestilential distempers in some parts of the Turkish dominions, were connected with a scanty supply or total want of Soap. The detection of the composition and nature of pestilential vapors had explained these facts, and

furnished a principle which cleared up the doubt and mystery of the whole subject.*

He called upon those whom it concerned, to see now what had been done. Notwithstanding all this testimony the Legislature had pronounced against these artists, and forbidden their manufactures to be carried on, but beyond certain limits, because they were *nusances* and generated *impure* air. This favored a little of legislating upon words; while the great body of facts, and the principle which pervaded the whole evidence, and the true interpretation of the phenomena, seemed to be overlooked. A public regulation which was wrong in principle, could not be expected to command universal respect. It was an unhappy occurrence when the People complained of the Laws; but it was likewise unhappy, that they should ever have reason to complain.

SECTION III.

AFFIDAVITS, &c. IN SUPPORT OF SOME MATTERS TOUCHED
UPON IN THE ARGUMENT.

Affidavit of EDWARD WADE.

THAT I have followed the business of a Tallow Chandler, for upwards of fifteen years in London; and the business of Tallow Chandler and Soap boiler, near twelve years in New-York, and have always experienced the same to be very healthful to myself and large family; in the year 1795, when the Yellow fever raged so much in New-York, great numbers died in Catharine Street where I live, and carry on my business, but my family and near neighbors escaped the contagion; my two sons, John and Charles, who worked constantly at the business, never experienced a greater share of health than at that time, I was but poorly for a few days, but by choice took to working over the tallow-

See Appendix, Note H

pan, and soon found myself much better; therefore as a means in the hands of Divine Providence, I and my family owe the preservation of our health and lives, from the healthfulness of the business, as none of us moved from home the whole time of the sickness.

Affidavit of JEREMIAH CONNER, Tallow-Chandler, and Soap Boiler.

THAT he hath worked for Mr. *Andrew Morris*, at the Soap and Candle Manufactory for the space of eight years and a half, past, during which time hath enjoyed good health, except for three weeks in the month January, 1793, which was occasioned by a severe cold. And this deponent further saith, that he knows of no instance of any person employed in the said manufactory, to be sick in the said term of eight years and a half; and further saith, that during the last Summer and Fall, there was a number of masons, carpenters and labourers employed by Mr. Morris at building, adjoining the manufactory, and has not known or heard of either of them being sick during the Summer or Fall, that they went through the said manufactory constantly, and when at work at said building, the windows of the manufactory were open on them, that they continued building, during the whole of the sickness, although the Fever prevailed in every direction: And this deponent further saith, that there is nothing putrid suffered to remain in said manufactory; and that he never hath thought, nor doth he now think the said business prejudicial or injurious to health having never known or heard of an instance, that any person's health was impaired thereby.

Affidavit of WILLIAM EAGLESON, Tallow Chandler, and Soap Boiler.

THAT for the time of three years and upwards, in which he worked at the said business of Tallow Chandling and Soap boiling in the City of Philadelphia in the State

of Pennsylvania, he enjoyed an uninterrupted degree of good health, nor doth he recollect of a single days illness. That during the time the malignant fever raged in Philadelphia, he resided near the drawbridge in Dock-street, where the fever seemed to rage most; that People died in every direction; that next door to the store and work-house, where the deponent carried on business, seven persons died; that he the deponent visited his friends and acquaintances when they were ill with the fever, but it never took any effect on him; that the family in which he then lived, consisted of five persons, and that during the sickness as aforesaid, they enjoyed a good state of health, and carried on the said business of Tallow Chandling and Soap boiling without interruption, and visited their friends without receiving any injury; that for two years and upwards since, he has resided in the City of New-York, has carried on said business, and never thought the said to be injurious or prejudicial to his health, or any person employed therein, and further saith not, except that he has every reason to think it a healthy employment.

Affidavit of JOHN LYONS.

THAT he hath been employed as a clerk to Mr. Andrew Morris, Soap boiler and Tallow Chandler, of said City, and in whose house he resided from the 22d. day of May 1795, to the 6th day of September 1796, when the deponent's business to Ireland occasioned him to leave his employ: that during said space, he enjoyed good health, and is assured, that it hath not been impaired, or received any injury whatever from the said Andrew Morris's manufactory, through which he hath had a constant recourse— And this deponent further saith, that he hath observed the said Andrew Morris and family, and all those employed by him in said manufactory, that they were remarkably healthful during the said space aforesaid, that even at the time of the dreadful sickness of 1795, not one of them were a day sick to his knowledge; and that he this deponent under-

stood the said business, besides being not unwholesome, to be in a great measure, a preservation against similar diseases, which was of some consolation to this deponent, during the above mentioned mortality, as it is well known that numbers of the people of some of the neighboring streets, fell victims to it : and further this deponent saith not.

Affidavit of THOMAS JAMES, Tallow Chandler and Soap Boiler.

THAT he hath worked at, and followed the Tallow Chandling business in London for the term of twelve years, during which time he enjoyed a perfect state of health, and has every reason to believe the above business in a great measure facilitated the good health he then enjoyed ; for at the expiration of the above time, he quitted the said business and followed that of a Wax Chandler ; and in a little time found his health much impaired, on which, he frequently visited Tallow Chandlers' shops, and doth believe he received benefit therefrom, and the said deponent further saith, that he entered again into the aforesaid business of a Tallow Chandler, and hath followed the same together with Soap Boiling, for seven years last past in the City of New-York, during which time he and his family enjoyed a good state of health.

Affidavit of HERCULES HERON.

THAT he has for eleven years immediately last past, exercised the calling of Soap boiler and Tallow Chandler in the City of New-York, and also for a number of years at different periods before that time, and has never since perceived, that it was any way dangerous to the health of himself and family, or any persons employed therein, and that he uniformly enjoyed a good state of health, except in the year 1795, when the malignant fever prevailed in this City, he was taken ill by assisting putting Dr. Abeel in his coffin ; but on resuming his employment as aforesaid, his health was again re-established.

Affidavit of DANIEL FAGAN Soap boiler and Tallow Chandler.

THAT he hath worked at said business mostly, for the space of twenty-two years, during which time he hath enjoyed good health ; except at one time some years back, when he had the fever and ague in the State of Pennsylvania, and at other intervals hath been troubled with a cold ; and this deponent further saith, that he hath always understood and believed said business to be wholesome, and hath not known any person whose health had been injured or impaired by any effects occasioned thereby. And this deponent further saith, that the factory in which he now works, belongs to Mr. Andrew Morris of said City, in which he hath worked off and on, for 9 years past, that it is the cleanliest he ever worked in ; that he hath during the above mentioned period of twenty two years, worked in many houses both in Pennsylvania and New-York. And further this deponent saith not.

Affidavit of ROBERT ADAMS, Bricklayer.

THAT during the sickness which prevailed in the city of New-York in the fall of last year, he employed a number of masons, bricklayers and labourers to work in an adjoining building to the works of Mr. Andrew Morris, Tallow Chandler and Soap boiler, in the first ward of the said City, and that the fever prevailed most in that part of the City, but that neither himself nor any of the persons employed by him were taken sick ; that he and they were passing through said works continually, and never received any injury in their health ; that they continued at that place employed during the whole of said season. And further saith not.

Affidavit PATRICK COCHRAN, Hair-dresser.

THAT he resides in the upper part of the house wherein Mr. John Collis also resides, and hath resided there from the 1st of May last ; that the yard of said house is adjoining the manufactory of Mr. Andrew Morris, Tallow Chandler and Soap boiler ; that he has daily passed through the yard of said

house, and has never at any time seen maggots come from said manufactory, although the windows of said manufactory are continually exposed to his view ; and this deponent further saith, that duringt he time of the sickness in this City, last Fall and Summer, an apprentice boy of his caught the prevailing fever, (as he supposes,) by shaving a Mr. M'Keig, that lived next door to his work-shop in Front-street, that the said boy slept in the workshop of this deponent, and after having taken sick, was removed to his dwelling house above mentioned, where he died, and was the first person in said house at that time sick of the fever. And farther saith not.

A P P E N D I X.

NOTE A.

Process of making Salt-petre in Germany and France.

From MASSEY'S Treatise.

“THE common peasants in France and Germany, who are almost all Saltpetre-makers, scrape together the muck and offals of their farm-yards, and throwing them under open sheds, suffer them to lie, till they find they will answer their end. Tho' they know little of the use of putrefaction, they take care to promote this process, by drenching them with urine, or muck-water ; and frequently turning them over, by which means they are brought to maturity, much sooner than the larger nitre-beds. These materials, with the *wood-ashes their hearths supply*, (if the latter are not added before) are thrown into a large tub, and water is poured upon them, which runs out thro' a hole stuffed with straw at the bottom of the vessel. Thus simply do they procure their Leys, in the boiling of which their women and children are chiefly employed.” —Thus this business is harmless and healthy, because the potash keeps down the septic acid, which would otherwise rise in vapour and infect the air.

NOTE B.

CHAPTAL's Experiment, shewing that the vapour from putrid blood, is of the septic (nitric) or infectious kind.

[Elements of Chemistry, p. 105.]

" TWENTY-five pounds of chalk, well washed in warm water, and exposed to the exhalation of bullock's blood in putrefaction during eleven months, afforded nine ounces of the nitrate (septeate) of lime, in a dried state; and three ounces one gros of crystals of nitrate (septeate) of potash, or common nitre."—Evincing the precise and noxious nature of this effluvium.

NOTE C.

Character of the Nitric (Septic) Acid,—from FOURCROI'S *Philosophy of Chemistry*, p. 82.

" NITRIC Acid, liquid, white, caustic, of a strong nauseous smell, formed of azote (septon) and oxygen, inflaming sulphur, charcoal, zinc, tin, and oils, yielding to combustible bodies, various portions of oxygen, and thus giving birth to nitrous acid, nitrous gas, or nitrous oxyd, destroying colours, burning and turning yellow, vegetable and animal substances, converting them into acids, decomposing ammoniac, PRODUCED BY PUTREFYING ANIMAL MATTER, forming nitrats with earths and alkalis, remaining slightly united with metallic oxyds and tending to acidify them."—" Nitric (septic) Acid, to the production of which it is well known how much animal substances contribute, in artificial nitre-pits, arises from the union of oxygene with azote (septon.) Ibid. p. 188.

NOTE D.

Impregnation of Water with (Septic) Nitric Matter.

From BERGMAN'S Analysis of Waters.

" SNOW-WATER contains a small quantity of salited lime, together with some slight vestiges of nitrous acid, &c."

" RAIN-WATER is generally contaminated with the same substances as the former, but in GREATER QUANTITY, &c."—

" WELL-WATER, besides a large quantity of the above-men-

tioned substances, often afford GYPSUM and NITRE :”—
 “ LAKE-WATERS are less clear than any of the former, &c.
 they sometimes contain all the substances above recited ; and
 besides, are generally vitiated by an ANIMAL OR VEGETA-
 BLE EXTRACT :”—“ MARSH-WATERS have less motion, and
 therefore are less clear, more heavy, and more VITIATED by
 EXTRACTIVE MATTER, &c.”

NOTE E.

From CHAPTAL'S *Chemistry*, p. 133, &c.

“ THE action of the Nitric (septic) Acid on most *inflam-*
mable matters, consists in nothing more than a *continual decom-*
position of this acid.”—“ The nitric (septic) acid when
 mixed with oils, renders them thick, and *black*, converts
 them into charcoal, or, inflames them, according as the acid
 is more or less concentrated, or in greater or less quantity.”
 —“ The facility with which this acid is decomposed, ren-
 ders it one of the *most active*, because the action of acids upon
 most bodies is in consequence of their own proper decompo-
 sition.”—THUS OILY SUBSTANCES DECOMPOUND THE
 MATTER OF INFECTION.

NOTE F.

*Impossibility of finding out Pestilential (Septic) Air by means of
 the EUDIOMETER.*

NITROUS GAS and *smoking nitrous acid*, are both of
 them, in the forms in which we see and handle them, arti-
 ficial productions. They can preserve their form and con-
 stitution in close vessels only. So great is their attraction
 for the principle of acidity, that they decompose vital air
 with great rapidity, whenever they meet with it, attracting
 to themselves its oxygen, and setting loose its caloric, or
 matter of heat. From the greediness with which they ab-
 sorb the *base of pure air*, they very soon become highly
 oxygenated, and turn to *septic acid* or *septic acid vapour*,
 pale, colourless, and in its sparse or dilute form, affecting
 the smell in a very small degree, or not at all. Availing

themselves of this tendency of *nitrous gas*, to become *septic acid* on its union with oxygen, the Chemists have invented the *Eudiometer*, an instrument calculated to measure what proportion of vital air is destroyed by a given quantity of nitrous gas mixed with it. *The process going on in the Eudiometer, is the very one by which infected air is formed*; and nothing but an additional quantity of it is wanting to contaminate the air of the experimenter's chamber, and make him sick or kill him. If now the *matter of pestilence*, or *volatile septic acid*, already exists in the atmosphere, and constitutes a portion of the air taken into the Eudiometer for trial, in sickly seasons, it is impossible that nitrous gas should enable us to detect it there. Pestilential air is nitrous gas saturated with oxygen and volatilized by heat; that is to say, the same sort of fluid which is produced in the Eudiometrical experiment; and as nitrous gas only measures the quantity of oxygen air decomposed, pestilential air will remain untouched and unchanged by it; seeming to lie quite beyond its reach. Hence we may understand why, upon principle, the Eudiometer should be incapable of ascertaining a pestilential condition of the atmosphere, or giving any notices about it; and wherefore, in practice, experiments with that instrument, have never advanced our knowledge or enlarged our ideas on this point. The difficulty which has attended the inquiry into the true history of the fluids which have azote (septon) for their basis, seems to have arisen thus: a parcel of salt-petre was taken and decomposed by a stronger acid in a close vessel; an acid called thence the *nitrous*, came over into the receiver, and separated itself into two portions, a quantity of oxygen gas, which was suffered to escape, and a portion of smoking acid which was condensed and stopped up for use. Its production, thus, was *artificial*, and it was always kept bottled up in a forced and unnatural manner. All this time, so strong was its attraction for oxygen, that the greatest care was necessary to prevent by the closest stoppers, any communication between them. From this fuming acid, the nitrous gas for experiments, was usually obtained; a production more artificial

than the former, and incapable of existing so long a time in the open air. Now it is remarkable, that the attention philosophers has in a great degree been directed to these *artificial productions*, while the *natural compounds of septon and oxygene* have received but a moderate share of attention.

These natural compounds are *septic oxyd* and *septic acid*; the former of which, *always*, and the latter *very often* exists in an aerial or volatile form. These are capable of maintaining their condition unaltered, under all modifications of the atmosphere. Their production, their abundance, their activity, their relations to other bodies, their decomposition, occupy an ample space in the field of philosophy, the surveying and cultivating of which, will afford employment for a great number of hands. Their attractions and affinities ought to be watched with the utmost care; and although the Eudiometer may not be adapted to direct our views in these respects, there are many other aids of which the diligent observer may avail himself. The explosion of this region, by following the footsteps of nature, must be allowed to be the most safe and sure. Very many, who have engaged in the undertaking, have been careless, and gone so far astray, that their performances contain but a small amount of valuable information. If they will leave alone, *their smoking nitrous acid* and *nitrous gas*, and attend to the history of the *septic oxyd* and *acid*, they will proceed in natural order and method, and make vastly greater progress.

NOTE G.

From BUILTTON's "Means of procuring Salt-Petre," &c.

"THE *nitrous* (he means the *nitric*) acid is generated in
 " the atmosphere by the help of the azote, or vitiated air,
 " which is disengaged from animal or vegetable substances,
 " when in a state of putrefaction. If, therefore, instead of
 " throwing sand on the ground in stables, &c. and building
 " or plaistering their walls with fat earth or clay, the ground
 " were to be covered with marle, or calcareous stone, and

“ the walls, within and without, plaistered with the same, beat and tempered with water, in the form of mortar, in five or six months time, the ground and also the plaister of the walls, would be found sufficiently changed with salt-petre to be lixiviated with advantage.”——“ By following the course of nature, it is possible to establish artificial nitre-beds : it is only necessary to build walls of calcareous stone, and instead of mortar, to make use of calcareous marle, tempered with water ; these walls should be plaistered over with the same kind of mortar, to the thickness of about two or three inches. *If the walls are built in the neighbourhood of dung-hills, or other heaps of filth, they will generate salt-petre so quickly that they may be lixiviated twice a year.*”——The substances he mentions as affording nitrous acid, are “ *the filth of cities, such as the contents of necessary-houses, the refuse of slaughter-houses, the sweepings of the streets, dead animals of all sorts, &c.*”

NOTE II.

Efficacy of Pot-ash to destroy putrid vapours.

The eye of an observer frequently meets with facts which illustrate and confirm this principle.—In Mr. Gaine’s *Almanac* for 1797, (a compilation containing much prudential and economical matter) there is a GOOD FAMILY RECEIPT, by which any meat, ever so stinking, may be made as sweet and wholesome in a few minutes, as any meat at all. The receipt is as follows : “ Take some white ley, that is, boil some clean ashes in water ; let it stand till it settles ; pour this off as clear as rock-water ; boil your meat in this three or four minutes, or till it is sweet, then wash it and dress it in any way, and no person could discover it had ever been fetid, or stinking.—This will be found a useful communication to the army and navy, where a *solution of pot-ash* may be used, instead of the white ley.”——I have learned, that some of the hucksters in the city of New-York, make a practice of buying up stinking beef, and tainted meat of all sorts, at the public sales, (our buyers and sellers do not

consider this sale of damaged provisions as injurious to the public health) for a very low price, and of sweetening them by washing and soaking in *Soap-boiler's ley*. They find that a few pails full of ley will restore to eatable condition, a barrel of stinking meat, which, by *this operation of the pot-ash*, is restored to a sound state, and sells for as good a retail price as if it had never been corrupted at all.—Can there be any thing more decisive as to the effect of *this alkaline salt*, in damping the pestilential fumes already risen, and preventing the extrication of more?

Extract of a Letter from professor MITCHILL, to Sir JOHN SINCLAIR, dated New-York, 28th Nov. 1796, on Manures.

IF septic fluids are so very abundant in the air as they are proved to be, especially in large cities, situated and regulated as many of those in the United States are, and at the same time, if they were so easily absorbed as experience shews they may be, that their bad effects should not be more frequently felt, and mortality greater than that which prevails at present be the consequence?

It soon appeared to me, that the pot-ash thrown into the streets with the dissolved soap which had been employed in washing, was possessed of qualities, enabling it to attract and attach these vapors, and existed in quantity sufficient to take a vast volume of them out of circulation. My ideas were reduced to a sort of system on the subject, by the following estimate of my friend Mr. SAMUEL RUSSEL of this City.

The city of New-York contains 60,000 inhabitants. One pound of hard or bar-soap is required to wash the clothes of ten persons for one week. The consumption of soap, therefore by the citizens, will be $10 \div 60,000 = 6,000$ pounds a week. Strangers, sailors and other transient persons may be supposed, on an average, to amount to 5000, which will make the weekly consumption 500 pounds more. The quantity

used up for cleaning houses, furniture, &c. and by barbers, scourers, &c. may be estimated as an additional 500. The whole weekly consumption thus amounts to $6,000 + 500 + 500 = 7,000$ lbs. The yearly consumption will consequently be $7,000 \times 52 = 364,000$ lbs. One third of the whole weight of soap is alkaline salt, consequently the quantity of pot-ash expended and thrown away in the city of New-York, is $3 \div 7000 = 2,333\frac{1}{3}$ lbs. every week, or $121,333\frac{1}{3}$ lbs. upwards of 54 tons per annum.

Such an amount of pot-ash is capable of counteracting the effect of an exceedingly great bulk of pestilential fluids, by attracting them to itself, destroying their aerial form, and thereby constituting salt-petre. If, as CHAPTAL computes, (Elements of Chemistry, &c.) one hundred grains of pure nitre contain thirty parts of septic acid, joined to sixty-three of pot-ash, and seven of the water of cristallization, then, upon the supposition that the whole of the alkali thrown into the streets is converted to nitre, there must be an addition of septic acid, equal to $\frac{30}{100}$ th parts of the whole, to neutralize the salt; that is to say, $121,333\frac{1}{3} + 30 \div 100 = 36,400$ lbs. or more than 16 tons of septic acid, requisite to turn such a mass of alkali to salt-petre; and in the same proportion for any smaller quantity.

In the foregoing estimate, the whole quantity of soap is reduced to hard soap for the following reason. Soft soap is sold at a much lower rate than hard, because it is much weaker. It is therefore used in families more extravagantly, and it is presumable, that the same quantity of alkali is expended as there would be if hard soap, and none else, was used.

But the solutions of soap poured into the gutters are not the only sources whence the pot-ash is derived; for the wood ashes of hearths, exposed, as it is, in yards, cellars, and ash-holes, or cast into the streets, furnish a large additional portion of Alkali. The fact I am about to mention shews at

once, the reality of such a process, and the existence of septic acid in our houses. On the lower floor of a rear building, in the city of New-York, the back part of a closet was a thin brick wall. On the outside of this wall, in the yard, the ash house was built. The only separation between the ashes put there and the closet, was the narrow partition of bricks. Their substance was so porous, that, in the course of time, a saline efflorescence was observed on the bricks within the closet near the floor. On examination, the potash, which had apparently penetrated through the wall, in a state of solution, was found to be changed to nitre, by a combination with septic acid, which it had doubtless attracted from the air of the room.

In these ways does it seem, that a considerable proportion of the mischief is prevented which would be caused by such noxious steams, if left to float about at large. If the scrapings of this city were employed in the manufacture of saltpetre, they would unquestionably afford a large quantity of it. But, as they are generally sold to the farmers for manure, it is worth the while to examine.

From Maitlands History of London.

Page 611.

TALLOW CHANDLERS.

THIS society was incorporated by letters patent of the 2d. of Edward 4th anno 1463 by the name of the Master, and Keepers, and commonalty of the art and mystery of Tallow Chandlers of the City of London.

This company is governed by a Master, four Wardens and thirty eight Assistants, with livery of 170 members, who when admitted pay a fine of £15 each. They have a stately Hall on Dowgate-hill to manage their affairs in.

Page 611.

SOAP MAKERS.

THIS society was incorporated by letters patent of the 13th of Charles I. 16th May Anno 1630 by the name of the Master, Wardens and commonalty of Soap makers of London.

They consist of a Master, two Wardens, and eighteen Assistants, but have neither livery or hall.

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Med. Hist.

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